EXTERNAL LOGISTICAL RESUPPLY REQUIREMENTS FOR VC/NVA FORCES IN SOUTH VIETNAM

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Note: This study is a Working Paper. It has not been reviewed or approved for publication by the Office of Research and Reports, Central Intelligence Agency

Introduction

The purpose of this memorandum is to estimate the external logistical resupply requirements in support of Communist main military forces in South Vietnam. Estimates appearing in this memorandum are based on (a) the current strength of VC/NVA forces in South Vietnam -- 117 battalions -- engaged in combat at current,* intermediate,** and extended*** levels of combat, and (b) a projected VC/NVA strength of 155 battalions, as estimated by MACV for the end of 1966, engaged in combat at these same levels of intensity. Much of the basic logistical data used in this memorandum has been obtained from DIA.**** The data have been applied to a current order of battle estimated to include 87 VC battalions and 30 NVA battalions, and a projected order of battle of 106 VC battalions and 49 NVA battalions, each battalion estimated to consist of an average of 530 men. External logistical resupply requirements also have been calculated separately for the current and projected strength of VC local forces (separate companies and platoons), of approximately 13,000 and 16,000 men, and are noted in footnote to Tables I and II, pp 6-7. These forces, however, are not regarded as having a requirement for external support.

* Each battalion engaged in combat 1 in 30 days.
** Each battalion engaged in combat 1 in 15 days.
*** Each battalion engaged in combat 1 in 7 days.
**** Logistic Requirements for the Viet Cong/North Vietnam Army, March 1966.

EXTERNAL LOGISTICAL REQUIREMENTS OF VIET CONG/NORTH VIETNAMESE FORCES IN SOUTH VIETNAM

ORR estimates that the external logistical requirement of Communist forces in South Vietnam under current combat conditions is more than 14 short tons per day, over two-thirds of which is ammunition. Almost 8 tons per day of the total requirement are estimated to be needed by the VC main forces, with the remainder required by NVA forces. If combat were to escalate by the end of 1966 to the point where the VC/NVA forces were engaged in combat once in every 7 days rather than once in every 30 days, as is the current estimate, and the strength of Communist forces concurrently was raised from 117 battalions to 155 battalions, the external logistical requirement would increase to approximately 100 tons. Ammunition accounts for almost 60 percent of the total estimated external requirement under the latter conditions, approximately the same percentage of the total attributed to NVA forces. Under all assumptions in this memorandum ammunition is by far the larger external need of VC forces, and Class IV supplies (medical, signal, etc.) the larger need of NVA forces. The estimated total external requirement of Communist forces in South Vietnam under varying levels of combat and at current and projected orders of battle is shown in the following tabulation:*

Frequency of Combat by Each Battalion	Short Tons/Day	
	Current Order of Battle (117 Battalions)	Projected Order of Battle (155 Battalions)
1 in 30 days	14.49	20.40
1 in 15 days	32.62	46.52
1 in 7 days	69.96	99.87

These estimates are subject to an error of unknown, and perhaps significant, magnitude for the following reasons: (1) provisions have not been made for

* Tables containing detailed requirements are found on pages 6-7.

accumulation of stockpiles, many of which have been depleted because of actions by friendly forces, (2) the estimated rate of expenditure of ammunition is based on World War II experience and may not, in fact, reflect the conditions in South Vietnam, (3) the DIA estimate of the current level of combat is admittedly tenuous.

METHODOLOGY

DAILY RESUPPLY REQUIREMENTS BY CLASS OF SUPPLY CLASS I (FOOD) AND CLASS III (POL)

All Class I and Class III requirements for resupply of VC/NVA forces in South Vietnam are estimated to be satisfied from within South Vietnam. Except for the Central Highlands, local production of food is more than adequate to provide for both VC and NVA military units in the area. POL requirements for the Viet Cong/NVA forces are small, being needed primarily for motorized junks in the delta region, generator equipment at command posts, some crude arms factories and limited use of confiscated vehicles. It further is estimated that neither Class I nor Class III external logistical requirements will be significant at the higher levels of combat and troop strength included in this memorandum.

CLASS II AND CLASS IV REQUIREMENTS FOR THE VC

The VC are estimated to obtain up to 90% of all Class II and Class IV requirements including quartermaster, transportation, chemical, and engineer support, from within South Vietnam. Ordnance, medical, and signal supply support, however, is obtained from abroad. Although not all units of the VC main force have been reequipped with the new family of 7.62 mm weapons,* a resupply requirement for this weapon in terms of daily tonnage would be only about 0.6 tons per day on the assumption that all forces are equipped with it. In this memorandum external requirements of the VC for Class II and IV are limited to allowances for weapons replacement, and medical and signal supplies. An estimated 5% of the total complement of weapons per battalion must be replaced each year because of losses through capture, destruction, or normal wear. Thus, the weapons

* By January, 1966 a minimum of 26 VC main force battalions were believed to be at least partially equipped with the new family of 7.62 mm weapons.

replacement factor is 0.002 lbs per man per day* for both the current level of combat and escalated levels of combat. With respect to medical and signal requirements, it is estimated that the Viet Cong consumption per man is 0.010 lbs. per man per day at the current level of combat, about 1/10 of that in the US Army under similar conditions. Under conditions of extended combat it is estimated that the VC would require outside support for all types of supply except engineer supplies. Again, it is estimated that the VC regular uses only 1/10 of the amount consumed by a US soldier. The VC requirement under light combat (each battalion engaged in combat 1 in 30 days) -- used as a basis for further calculations -- is then 0.211 lbs. per man per day. By extrapolation VC medical and signal requirements under conditions of intermediate combat amount to 0.042 lbs. per man per day, and under extended combat 0.090 lbs. per man per day. Total Class II and Class IV requirements for VC forces for each level of combat intensity are shown in Tables I and II of the Appendix.

CLASS II AND CLASS IV REQUIREMENTS FOR THE NVA

The weapons replacement factor for the NVA is estimated to be the same as that for the VC -- 0.002 lbs. per man per day. At current levels of combat the Class IV requirement for NVA forces is estimated at 0.5 lbs. per man per day; under conditions of intermediate and extended combat, the requirement is estimated to increase to 1.4 lbs. and 3 lbs. per man per day respectively. Total Class II and Class IV requirements for NVA forces for each level of combat also are shown in Tables I and II of the Appendix.

CLASS V REQUIREMENTS FOR VC/NVA FORCES

The Class V requirement for VC/NVA forces -- all of which is estimated to be required from external sources -- is based on the expenditure of 1/3 the basic load of

* $\frac{\text{Number of battalions}}{\text{number of men estimated in the order of battle.}} \times 3.6 \text{ tons of wpns per battalion} \times 5\% \div 365 \text{ days} \times 2000 \text{ lbs/ton} \div$

ammunition per battalion per engagement at the current level of combat. The level of combat, in turn, is based on an evaluation of information contained in MACV monthly evaluations and situation reports. According to MACV there were an estimated 600 VC/NVA actions of battalion-size in the last six months (double the number of actions of battalion-size during the first six months of 1965). In the last six months the number of VC/NVA battalions averaged approximately 100. Therefore, in this period each battalion engaged in combat on the average of 1 in 30 days. The expenditure of ammunition for the current Communist main force at the current combat level is calculated as follows:

117 battalions X 7.9 tons (the basic load of ammo per battalion) ÷ 3 (1/3 the basic load) ÷ 30 X 2000 (lbs/ton) ÷ 61,990 (men in the current force) = .33 lbs. per man per day.

In calculating the ammunition requirement for escalated levels of combat (1 in 15 or 1 in 7 days) and the projected order of battle (155 battalions), the numbers 15 or 7 were substituted for 30, and 155 and 82,150 were substituted for 117 and 61,990.

The rates of ammunition expenditure appearing in Tables I and II of the Appendix do not reflect the ammunition expended by 120 mm mortars and other heavier weapons which have recently been introduced into some main force units, nor that expended by two NVA anti-aircraft battalions now in South Vietnam. Such an estimate would require more complete intelligence reports from sources in the field. However, the presence of these units would not, at present, substantially alter the estimated total daily external requirements of ammunition, probably effecting an increase of less than one ton per day. The failure to include an ammunition allowance for the newly introduced weapons probably is largely offset by the fact that not all main force units have been reequipped with the new family of 7.62 mm weapons, as has been assumed in this memorandum.

Table I

Current External Logistical Resupply Requirements
(Short Tons Per Day)

Strength	(87 VC battalions) 46,110* VC	Lbs/Man/Day	(30 battalions) 15,880 NVA	Lbs/Man/Day	Total
1. Each battalion engaged in combat 1 day in 30					
Class of supply					
Class II & IV	.28	.012	3.99	.502	4.27
Class V	7.60	.33	2.62	.33	10.22
Total	7.88		6.61		14.49
2. Each battalion engaged in combat 1 day in 15.					
Class of supply					
Class II & IV	1.01	.044	11.16	1.40	12.17
Class V	15.21	.66	5.24	.66	20.45
Total	16.22		16.40		32.62
3. Each battalion engaged in combat 1 day in 7.					
Class of supply					
Class II and IV	2.12	.092	23.84	3.002	25.96
Class V	32.73	1.42	11.27	1.42	44.00
Total**	34.85		35.11		69.96

* Strength does not include the 18,000 man combat support element nor a local force of separate companies and platoons estimated to be approximately 13,000 men.

** Should the 13,000 man local force require external support, its requirements would be: 2.22 tons for combat 1 day in 30 days, 4.58 tons for combat 1 in 15 days, 9.82 tons for combat 1 in 7 days.

Table II

Projected External Logistical Resupply Requirement

(Short Tons Per Day)

Strength	(106 battalions) 56,180* VC	Lbs/Man/Day	(49 battalions) 25,970 NVA	Lbs/Man/Day	Total
1. Each battalion engaged in combat 1 day in 30					
Class of Supply					
Class II & IV	.34	.012	6.52	.502	6.86
Class V	9.26	.33	4.28	.33	13.54
Total	9.60		10.80		20.40
2. Each battalion engaged in combat 1 day in 15					
Class of Supply					
Class II & IV	1.24	.044	18.18	1.40	19.42
Class V	18.53	.66	8.57	.66	27.10
Total	19.77		26.75		46.52
3. Each battalion engaged in combat 1 day in 7					
Class of Supply					
Class II & IV	2.58	.092	38.98	3.002	41.56
Class V	39.88	1.42	18.43	1.42	58.31
Total**	42.46		57.41		99.87

* Strength does not include the projected 21,240 man combat support element nor the local force of separate companies and platoons at a projected strength of 16,390 men.

** Should the 16,390 man local force require external support, its requirements would be: 2.80 tons for combat 1 in 30 days; 5.76 tons for combat 1 in 15 days; 12.39 tons for combat 1 in 7 days.